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**CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)**

Applicant(s): CHEN, et al.

Docket No.

API-0002

Serial No.

10/716,175

Filing Date

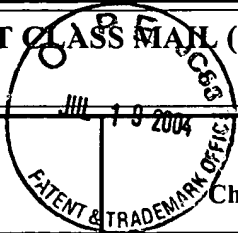
11/18/2003

Examiner

Charanjit Aulakh

Group Art Unit

1625



Invention: **SUBSTITUTED ARYL THIOUREAS AND RELATED COMPOUNDS;  
INHIBITORS OF VIRAL REPLICATION**

I hereby certify that this Trans. of IDS (3 pgs), IDS (2 pgs), 1449 (3 pgs), Cited Art (15 refs), Cert of  
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is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

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Laura J. Nolan

(Typed or Printed Name of Person Mailing Correspondence)

Laura J. Nolan

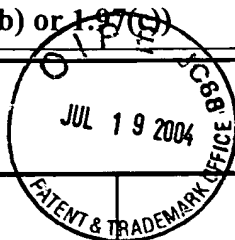
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**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT****(Under 37 CFR 1.97(b) or 1.97(e))**

Docket No.

API-0002

In Re Application Of: **CHEN, et al.**

Serial No.

10/716,175

Filing Date

11/18/2003

Examiner

Charanjit Aulakh

Group Art Unit

1625

Title: **SUBSTITUTED ARYL THIOUREAS AND RELATED COMPOUNDS;  
INHIBITORS OF VIRAL REPLICATION**

Address to:

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**37 CFR 1.97(b)**

1. ☐ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

**37 CFR 1.97(c)**

2. ☒ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

☒ the statement specified in 37 CFR 1.97(e);

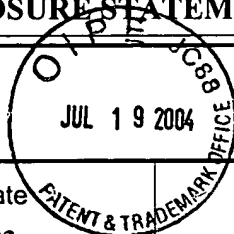
**OR**

☐ the fee set forth in 37 CFR 1.17(p).

**STATEMENT UNDER 37 CFR 1.97(e) ACCOMPANYING  
INFORMATION DISCLOSURE STATEMENT**

Docket No.  
**API-0002**

In Re Application Of: **CHEN, et al.**



Serial No.  
**10/716,175**

Filing Date  
**11/18/2003**

Examiner  
**Charanjit Aulakh**

Group Art Unit  
**1625**

Invention: **SUBSTITUTED ARYL THIOUREAS AND RELATED COMPOUNDS;  
INHIBITORS OF VIRAL REPLICATION**

**TO THE COMMISSIONER FOR PATENTS:**

This is a statement under the provisions of 37 CFR 1.97(e) in the above-identified application.

Check applicable statement herebelow:

**Statement Under 37 CFR 1.97(e)(1)**

- ☒ Each item of information contained in the accompanying Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Information Disclosure Statement.

**Statement Under 37 CFR 1.97(e)(2)**

- ☐ No item of information contained in the accompanying Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned person, after making reasonable inquiry, no item of information contained in the accompanying Information Disclosure Statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

A handwritten signature in cursive script, appearing to read "L. Horvath".

*Signature*

**Leslie-Anne Horvath  
Reg. No. 44,778  
Customer No. 23,413  
(860) 286-2929**

Dated: **July 15, 2004**

**Certificate of Mailing by First Class Mail**

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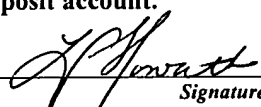
A handwritten signature in cursive script, appearing to read "Laura J. Nolan".

*Signature of Person Mailing Correspondence*

**Laura J. Nolan**

*Typed or Printed Name of Person Mailing Correspondence*

CC:

<b>TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT</b> (Under 37 CFR 1.97(b) or 1.97(c))			Docket No. API-0002	
In Re Application: <b>CHEN, et al.</b>				
Serial No. 10/716,175	Filing Date 11/18/2003	Examiner Charanjit Aulakh	Group Art Unit 1625	
<b>SUBSTITUTED ARYL THIOUREAS AND RELATED COMPOUNDS;          INHIBITORS OF VIRAL REPLICATION</b>				
<b>Payment of Fee</b> (Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))				
<input type="checkbox"/> A check in the amount of _____ is attached. <input checked="" type="checkbox"/> The Director is hereby authorized to charge and credit Deposit Account No. <b>06-1130</b> as described below.				
<input type="checkbox"/> Charge the amount of _____ <input checked="" type="checkbox"/> Credit any overpayment. <input checked="" type="checkbox"/> Charge any additional fee required.				
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>Certificate of Transmission by Facsimile*</b></p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (F:         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           _____            (Date)         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           _____            Signature         </div> <div style="border: 1px solid black; padding: 5px;">           _____            Typed or Printed Name of Person Signing Certificate         </div> </div> <div style="width: 45%;"> <p><b>Certificate of Mailing by First Class Mail</b></p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">           I certify that this document and fee is being deposited on <b>July 15, 2004</b> with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.         </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">             Signature of Person Mailing Correspondence         </div> <div style="border: 1px solid black; padding: 5px;">           Laura J. Nolan            Typed or Printed Name of Person Mailing Certificate         </div> </div> </div>				
<p><b>*This certificate may only be used if paying by deposit account.</b></p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 45%;">             _____            Signature         </div> <div style="width: 45%;">           Dated:    <b>July 15, 2004</b> </div> </div>				
<b>Leslie-Anne Horyath</b> Reg. No. 44,778 Customer No. 23,413 (860) 286-2929				
CC:				



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Dawei CHEN, et al.

Serial No.: 10/716,175

Filed: 11/18/03

For: SUBSTITUTED ARYL THIOUREAS AND  
RELATED COMPOUNDS; INHIBITORS  
OF VIRAL REPLICATION

)  
) Group Art Unit: 1625  
)  
)  
) Examiner: Charanjit Aulakh  
)  
)  
)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §§ 1.56, 1.97 AND 1.98

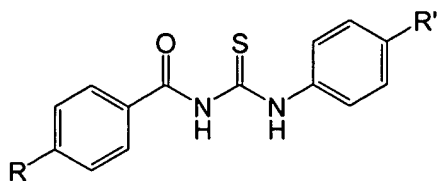
Dear Sir:

In compliance with the duty to disclose, submitted herewith is form PTO-A820 (PTO-1449) listing publication(s) of which those designated by 37 CFR § 1.56 are aware. Copies of the non-United States patents or published applications are enclosed.

The filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made, or an admission that the information cited is, or is considered to be, material to patentability.

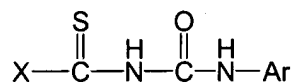
Some of the documents listed on attached Form PTO-1449 are not in English. As required by 37 C.F.R. §1.98(a)(3) applicants have provided below a concise explanation of the relevance of each listed reference that is not in the English language.

Reynaud, P., et al. "*p*-alcoxy benzoyl-1 *p*-alcoxyphényl-3 thiourées: leur activité <<in vitro>> et <<in vivo>> sur la souche H<sub>37</sub>RV du bacille tuberculeux" Chimie Thérapeutique (1966), 7, 421-4 is in French. Applicants do not have a translation of this document, but understand it to be directed to the effects of substituted thioureas on a strain of tuberculosis bacteria. Applicants understand the substituted thioureas disclosed in the reference differ substantially in structure from those of the elected group. For example, the table on page 424 discloses compounds of the formula



wherein R and R' are alkoxy groups of various chain links. The compounds disclosed in the reference lack the benzyloxy-phenyl, or phenoxy-phenyl functional group of the elected group.

Goerdeler, J., et al., "Substituierte Thiazolin-dione-(4.5) und ihre thermische Spaltung in Isocyanate und Senföle" Chemische Berichte (1966) 99(11), 3572-81 is in German. Applicants do not have a translation of this document but understand it to pertain to compounds that differ substantially from those of the application. The most pertinent compounds appear to be compounds 7a-f. These compounds have the general structure




Thus the compounds disclosed in the reference lack the central thiourea functional group of the claimed compounds.

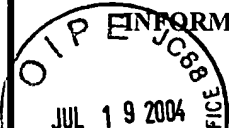
Goerdeler, J., et al., "Das dualistische Verhalten von Carbamoyl-isothiocyanaten, I," Liebigs Ann. Chem. (1970) 731, 120-141 is in German. Applicants do not have a translation of this document but understand it to pertain to compounds that differ substantially from those of the elected group. The most pertinent compounds appear to be compounds 4a-j. The compounds disclosed in the reference lack the benzyloxy-phenyl, or phenoxy-phenyl functional group of the elected group.

Respectfully submitted,

CANTOR COLBURN LLP

By:   
 Leslie Anne Horvath  
 Reg. No. 44,778

Date: July 15, 2004  
 Customer No. 23,413  
 (860) 286-2929

<div style="text-align: center;">  <b>INFORMATION DISCLOSURE CITATION</b>  <i>(Use several sheets if necessary)</i> </div>	Docket Number (Optional) <b>API-0002</b>	Application Number <b>10/716,175</b>
	Applicant(s) <b>CHEN, et al.</b>	
	Filing Date <b>November 18, 2003</b>	Group Art Unit <b>1625</b>

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	TRADEMARK OFFICE	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		3,699,110	10/17/1972	Dixon			
		4,082,765	04/04/1978	Kirkpatrick			
		6,060,484	05/09/2000	Fritz et al.			

**FOREIGN PATENT DOCUMENTS**

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

**OTHER DOCUMENTS** *(Including Author, Title, Date, Pertinent Pages, Etc.)*

1		International Search Report dated 04/05/2004 - International Application No. PCT/US03/36809, International Filing Date 18/11/2003
2		Douglass, Irwin B., et al "Some Derivatives of Benzoyl and Furoyl Isothiocyanates and their Use in Synthesizing Heterocyclic Compounds", Journal of the American Chemical Society, vol. 56, no. 3, March 1934 (1934-03), pages 719-721, American Chemical Society, Washington, DC

<b>EXAMINER</b>	<b>DATE CONSIDERED</b>
-----------------	------------------------

**EXAMINER:** Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>		Docket Number (Optional) <b>APH-0002</b>	Application Number <b>10/716,175</b>
		Applicant(s) <b>CHEN, et al.</b>	
		Filing Date <b>November 18, 2003</b>	Group Art Unit <b>1625</b>
<b>*EXAMINER INITIAL</b>	<b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i>		
3	Goerdeler, J., et al. "Das dualistische Verhalten von Carbamoyl-isothiocyanaten, I", Liebigs Annalen Der Chemie, vol. 731, 1970, pages 120-141, Verlag Chemie, Weinheim, DE		
4	Goerdeler, J. et al., "Über Thioacyl-isocyanate, V. Substituierte Thiazolin-dione-(4.5) und ihre thermische Spaltung in Isocyanate und Senföle" Chemische Berichte, vol. 99, no. 11, 10 November 1966 pages 3572-3581, Verlag Chemie, Weinheim, DE		
5	Kulka, Marshall, "Base-catalysed ring opening of N-(aminothioxomethyl-5,6-dihydro-2-methyl-1, 4-oxathiin-3-carboxamides" Canadian Journal of Chemistry, vol. 58, no. 19, 1 October 1980, pages 2044-2048, National Research Council, Ottawa, CA		
6	Kutschy, P., et al., "Synthesis of some analogues of indole phytoalexins brassinin and methoxybrassinin B and their positional isomers" Collection of Czechoslovak Chemical Communications, vol. 64, no. 2, February 1999, pages 348-362		
7	Matosiuk, Dariusz, et al., "Synthesis of new 1-aryl-3-piperidinylcarbonylimidazolidine-2-ones and 2-thiones" Acta Poloniae Pharmaceutica - Drug Research, vol. 53, no. 1, 1996, pages 75-77, Polish Pharmaceutical Society, Warsaw, PL		
8	Matsuo, Masaaki, et al., "New 2-aryliminoimidazolidines. I. Synthesis and antihypertensive properties of 2-(2-phenoxyphenylimino)imidazolidines and related compounds" Chemical and Pharmaceutical Bulletin, vol. 33, no. 10, October 1985, pages 4409-4421.		
9	Mukmeneva, N.A., et al., "3-Benzoylthiourea derivatives as antioxidants for polymers" Russian Journal of Applied Chemistry, vol. 67, no. 4, April 1994, pages 565-567, Consultants Bureau, New York, NY		
10	Otazo-Sanchez, Elena, et al., "Aroylthioureas: new organic ionophores for heavy-metal ion selective electrodes" Journal of the Chemical Society, Perkin Transactions 2, no.11, November 2001, pages 2211-2218, Royal Society of Chemistry, Letchworth, GB		
11	Reynaud, P., et al., "Preparation de quelques p-alcoxy-benzoyl-1 p-alcoxyphenyl-3 thiourees: leur activite <in vitro> et <in vivo> sur la souche H37RV du bacille tuberculeux" Chimica Therapeutica, no. 7, November 1966, pages 421-424, Societe D'Etudes De Chimie Therapeutique, Paris, FR		
12	Sengupta, Anil K., et al, "Studies on potential pesticides, Part V. Synthesis of some new aryl ureas and thioureas and their insecticidal activity" Journal of the Indian chemical Society, vol. 53, no.1, January 1976, pages 203-204, Indian Chemical Society, Calcutta, IN		
13	Seth, Punit P., et al, "Efficient solution phase synthesis of 2-(N-acyl)-aminobenzimidazoles" Tetrahedron Letters, vol. 43, no. 41, 7 October 2002, pages 7303-7306, Elsevier Science Publishers, Amsterdam, NL		
14	Shearer, Barry G., et al., "Substituted N-phenylisothioureas: potent inhibitors of human nitric oxide synthase with neuronal isoform selectivity" Journal of Medicinal Chemistry, vol. 40, no. 12, 6 June 1997, pages 1901-1905, American Chemical Society, Washington, DC		
<b>EXAMINER</b>		<b>DATE CONSIDERED</b>	
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15		Taniguchi, Kiyoshi, et al., "New 2-aryliminoimidazolidines. II. Synthesis and antihypertensive activity of 2-(biphenylimino)imidazolidines" Chemical and Pharmaceutical Bulletin, vol. 40, no. 1, January 1992, pages 240-244, Pharmaceutical Society of Japan, Tokyo, JP			
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